DOCUMENT RESUME

ED 296 221 CG 020 911

AUTHOR O'Brien, Ruth A.
TITLE Role of Social Support in Bereavement Outcomes.
SPONS AGENCY National Inst. on Aging (DHHS/PHS), Bethesda, MD.
PUB DATE Nov 87
GRANT 1-R01-AG04028
NOTE 22p.; Paper presented at the Annual Scientific Meeting of the Gerontological Society (40th, Washington, DC, November 18-22, 1987).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Coping; Death; Emotional Adjustment; *Grief; *Health; Middle Aged Adults; Models; Older Adults; *Social Support Groups; Spouses; *Well Being; *Widowed
IDENTIFIERS *Bereavement

ABSTRACT

This study examined four propositions by which social support may impact the physical and mental well-being of the bereaved: (1) social support has a direct effect on health; (2) social support reduces stress which, in turn, affects health; (3) social support stimulates the development of coping strategies and promotes mastery, thereby affecting health; and (4) social support promotes health protective behaviors which, in turn, impact on health. Data to test the proposed model were collected through semi-structured interviews and standardized questionnaires with 490 widows and widowers at 6 weeks (T1), 6 months (T2), 12 months (T3), 18 months (T4), and 24 months (T5) following the loss of the spouse. A linear structural equation approach using the statistical program LISREL was employed in the analysis of data. A model was estimated with an adequate fit for T1, T2, and T3, but not for T4 or T5. There was no evidence for a direct effect of social support on the well-being of the bereaved. In examining the indirect effects of social support, parameter estimates were consistent with the premise that social support enhances coping behaviors which, in turn foster well-being (as evidenced by diminished illness symptomatology). Perceived stress also had a direct positive effect on illness symptomatology. (Six figures and 25 references are included.) (Author)

ROLE OF SOCIAL SUPPORT IN BEREAVEMENT OUTCOMES

Ruth A. O'Brien, Ph.D., R.N.
Associate Professor of Nursing
University of Rochester
601 Elmwood Avenue
Rochester, NY 14642

Paper presented at 40th Annual Scientific Meeting of The Gerontological Society of America, November 18-22, 1987, Washington, D.C. The study was supported by a grant from the National Institute on Aging (1 R01 AG04028)

ABSTRACT

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Ruth .A. O'Brien, Ph.D., R.N.
School of Nursing
University of Rochester
601 Elmwood Avenue
Rochester, NY 14642

This study examined four propositions by which social support may impact the physical and mental well-being of the bereaved: (a) social support has a direct effect on health; (b) social support reduces stress which, in turn, affects health; (c) social support stimulates the development of coping strategies and promotes mastery, thereby, affecting health; (d) social support promotes health protective behaviors which, in turn, impact on health. Data to test the proposed model was collected through semi-structured interviews and standardized questionnaires with 490 widows and widowers at 6 weeks, 6, 12, 18 and 24 months following the loss of the spouse.

A linear structural equation approach using the statistical program LISREL was employed in the analysis of data. A model was estimated with an adequate fit for T1, T2 and T3, but not for T4 or T5. There was no evidence for a direct effect of social support on the well-being of the bereaved (β=-0.022). In examining the indirect effects of social support, parameter estimates were consistent with the premise that social support enhances coping behaviors (β=0.572) which, in turn foster well-being (as evidenced in this study by diminished illness symptomatology, β=-0.179). Perceived stress also had a direct positive effect on illness symptomatology (β=0.475).

Specific Aims

Substantial empirical evidence of an inverse relationship between social support and illness among persons undergoing a variety of life stressors has been accumulated over the past two decades(1). There is, however, little consensus about the mechanisms by which social support functions to reduce risk of mental and physical disorder. Of relevance to this study were the premises that: (a) social support has a direct positive effect on physical and mental health by fulfilling basic needs of the individual for continued affirmative relations with others; (b) social support buffers the effects of life events by diminishing the stress experienced which, in turn, enhances physical and mental health; (c) social support stimulates the development of coping strategies and promotes mastery, thereby fostering physical and mental health; and (d) social support promotes health protective behaviors which, in turn, reduce the risk of diminished physical and mental health(1-3). Figure 1 illustrates the proposed theoretical model.

Study Design and Methodology

Design. The loss of a spouse was the stressor chosen for testing the theoretical model. That the loss of one's spouse is a generally disorganizing life event and entails severe stress has been well documented (4). Furthermore, increased mortality and morbidity among the bereaved have been reported (5-11). Utilizing a longitudinal panel design, data pertaining to social support, perceived stress, coping behaviors, health practices and well-being of widows and widowers were collected at 6 weeks, 6 months, 12 months, 18 months and 24 months following the death of the spouse through semi-structured interviews which incorporated a number of standardized scales. The decision to follow-up

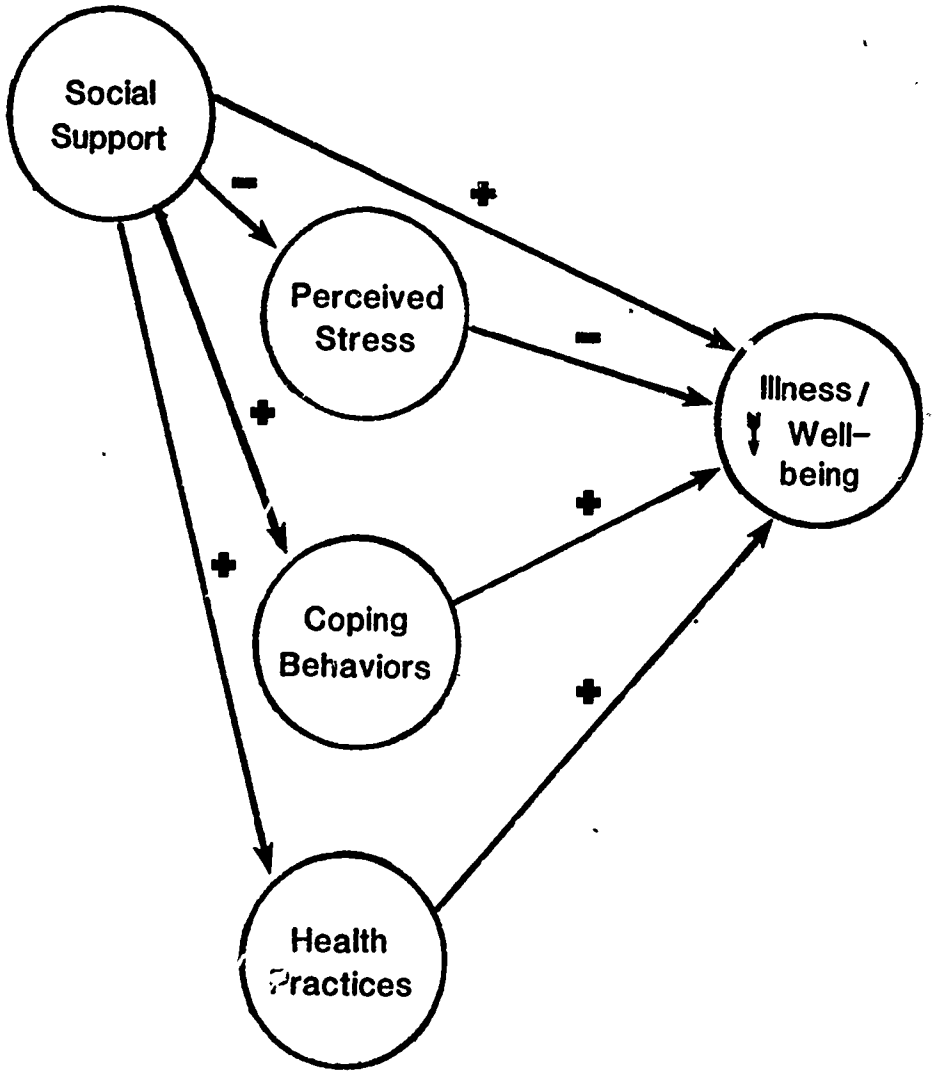

Figure 1. Proposed Theoretical Model

widows and widowers for two years subsequent to the death of the spouse was based on theory suggesting that the griewing process may last up to two years or more, especially among the older widowed (12-16).

Measurement of variables. The quantitative and qualitative aspects of social support were measured using an adapted version of the Social Network List and Support System Scale developed by Hirsch (17). In testing the proposed theoretical model, two indicators of social support were used. They included: (a) seeking social support (SSS), a factor scale comprised of four items which tapped the extent to which an individual actively turned to others for support around the loss of the spouse; e.g., "I look for increased emotional support or social contact with others," " I talk about my spouse's death with others," "I talk to people who have also lost a spouse to see how they are dealing with it," "I seek advice of others who I feel know and understand my situation;" and (b) mean perceived supportivenss of their interactions and exchanges with network members.

The construct of perceived stress was based on the perspective of widowhood as both a stressful event and a continuing stressful situation. To measure the impact of the loss of the spouse, the intrusion subscale of the Impact of Event Scale (IES) developed by Horowitz, Wilner and Alvarez(18) was used. The latter, comprised of 8 items, taps the form and quality of conscious experience of the death of the spouse in the individual's current life. Typical items included "I had trouble doing other things because the event kept coming into my mind," and "I had dreams about it."

To measure the cumulative stresses that may accompany widowhood, the investigator developed a list of life style changes and hardships that frequently were cited in the literature on bereavement. Subjects were

asked to specify which of the life style changes and hardships they experienced and to rate the degree of stressfulness created by each on a 4-point rating scale. A summary score (LCS) was obtained by adding a subject's responses to relevant items. Additionally, subjects were asked to subjectively rate the overall degree of stressfulness (Stress) they were experiencing in relation to the loss of their spouse on a 7-point rating scale.

Coping was defined as cognitive and behavioral efforts one uses to manage specific external and/or internal demands that are appraised as taxing or exceeding one's resources. The strategies employed by subjects in coping with the loss of the spouse were measured by the Coping Inventory (CI) developed by Horowitz and Wilner (19). Three factor scores were created and used as indicators of coping in testing the theoretical model. They were: (a) activity oriented coping (ACT) which tapped the extent to which an individual tried to cope with the loss of the spouse by focusing on other activities or things, e.g., "I try to concentrate on other things in my life," "I am trying to develop new interests," "I am trying to be more useful to others," "I spend more time listening to music, reading, watching television, and writing;" (b) cognitive oriented coping (COG) which tapped the extent to which one tended to adopt a positive perspective of the stressor, e.g., "I remind myself that what has happened could have been worse," "I think about the good things in our life together and weigh what has happened against them for a better perspective," I find consolation in my religious beliefs;" and (c) problem focused coping (PROBFOC) which tapped the extent to which one used a planful problem solving approach, e.g., "I am trying to clarify the choices I have in adjusting my life to the loss of my spouse," "I try not to make any important decisions unless I am sure I have thought things

through carefully," "I am using past experiences to help me deal with the present changes in my life."

Health practices of subjects were elicited by nine interview items developed by Belloc and Breslow (20) pertaining to sleep patterns, nutrition, exercise, smoking and alcohol consumption. While the investigator had planned to create an index of health practices from these items, the items were only weakly intercorrelated. Thus, only the measure of alcohol consumption was retained in the test of the proposed model as it evidenced the strongest bivariate relationships with the measures of well-being.

Well-being, as measured in this study, relied on the widow or widower's subjective perception of health and self-report of selected feeling states and somatic symptoms. Feeling states were assessed by the depression subscale of the Hopkins Symptoms Checklist (21). In addition, subjects were asked to complete a Physical Symptoms Checklist to assess the extent to which they had experienced a variety of nonspecific physical symptoms which have been noted to occur under conditions of stress. Data regarding subject's self-reported visits to the physician for evaluation and treatment of illness and use of sedatives and tranquilizers also were obtained through interview items.

Sample and Setting. Potential subjects for the study were identified through death certificates filed with the local county health department. The recruitment of subjects was restricted to new widows and widowers who were 45 years of age or older, resided in the general community, and were living with their spouse at the time of death. A total of 490 subjects participated in the first interview at 6 weeks following the loss of the spouse. As illustrated in Table 1, the predominantly white (94%) sample included 333 widows and 157 widowers between the ages of 45 and 96 years,

TABLE 1. DEMOGRAPHIC CHARACTERISTICS OF SUBJECTS

	N	%
SEX		
MALE	157	31.9
FEMALE	333	68.1
RACE		
WHITE	462	94.3
NONWHITE	28	5.7
AGE		
45 - 54 YEARS	83	16.8
55 - 64 YEARS	150	30.6
65 - 74 YEARS	179	37.0
75 - 84 YEARS	66	13.0
85 - 96 YEARS	12	2.6
EMPLOYMENT STATUS		
FULL-TIME WORK	121	24.6
PART-TIME WORK	45	9.1
UNEMPLOYED	324	66.3
RELIGION		
CATHOLIC	249	50.8
PROTESTANT	195	39.6
JEWISH	22	4.7
OTHER DENOM.	10	2.0
NONE	14	2.8

EDUCATION		
LT 7TH	19	3.9
7 - 9TH	61	12.6
10 - 11TH	73	14.8
H.S. GRAD	148	30.1
PARTIAL COLLEGE	115	23.4
COLLEGE GRAD	49	10.2
GRAD SCHOOL	25	5.1
INCOME (YEARLY)		
LT $5,000	14	2.9
$ 5,000 - 9,999	143	29.2
$10,000 - 14,999	128	26.1
$15,000 - 19,999	69	14.1
$20,000 - 29,999	68	13.9
$30,000 - 39,999	44	8.9
$40,000 OR MORE	24	4.9
LIVING ARRANGEMENTS		
ALONE	320	65.4
WITH CHILD/CHILDREN < 19 YRS	30	6.1
WITH CHILD/CHILDREN ≥ 19 YRS	122	24.8
WITH OTHER (SIBLING, FRIEND,ETC)	18	3.7
YEARS MARRIED		
0 - 9	19	3.8
10 - 19	24	4.8
20 - 29	64	12.8
30 - 39	168	32.4
40 - 49	139	30.4
50 - 59	66	13.4
60+	10	2.2

with a mean of 64.6 years. The majority of subjects were now living alone. The mean years of marriage for the sample as a whole was 37.3 years, suggesting that the loss of the spouse resulted in the disruption of a significant long-term relationship for most subjects. Overall, sample characteristics relative to education and occupation were consistent with a middle-class designation as determined by Hollingshead's Four Factor Index. Religious preference was fairly evenly divided between Catholic and Protestant with a small percentage of Jewish or other faiths.

Findings

The analysis employed a linear structural equation approach using the statistical program LISREL VI. Figure 2 illustrates the measurement model for the structural equations. The statistical task was twofold: (a) to estimate the model parameters and to (b) to evaluate the goodness-of-fit of the model. Associations posited by the theoretical model are estimated on the basis of the observed data. The goodness-of-fit is assessed by comparing the observed correlation matrix with a data matrix computed on the basis of the parameter estimates; values of the goodness-of-fit index may range from 0 to 1.0 with higher values indicative of a more adequate fit. Other indicators of the goodness-of-fit of the model provided by the computer program include modification indices, residual coefficients, and the coefficient of determination for structural equations. Modification indices of 5.0 or less and residual coefficients of 2.0 or less are indicative of an adequate fit. Whereas, higher values of the coefficient of determination for structural equations are desirable as these reflect the amount of variance in the dependent variable accounted for by the independent and mediating variables (22).

Age, sex, education, and income were entered into the model as exogeneous variables since the literature suggested that these variables

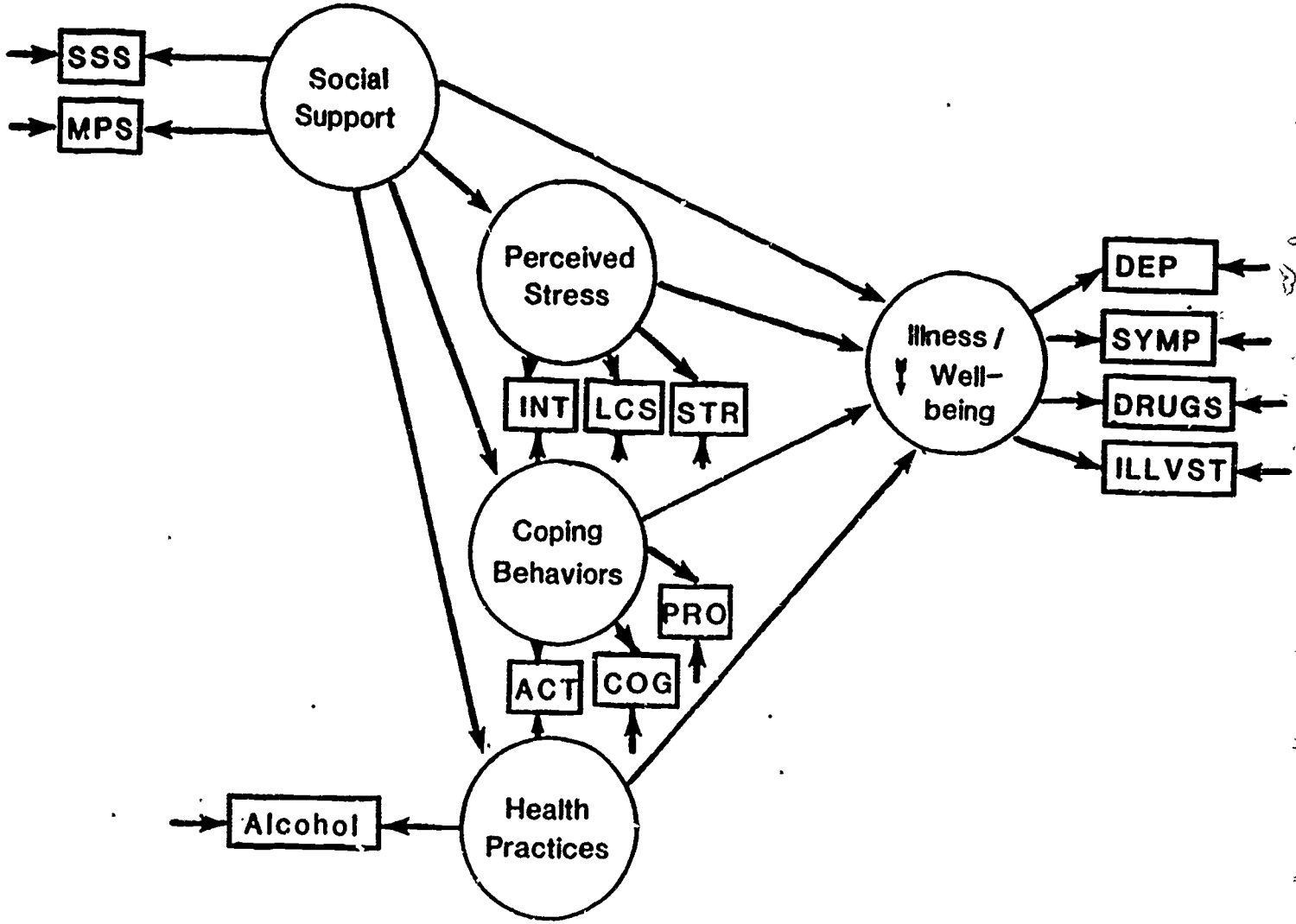

Figure 2. LISREL Measurement Model

might impact the measures of the theoretical constructs. Figure 3 depicts the parameter estimates for the model at T_1; for a sample size of N = 490, parameter estimates less than 0.10 are not statistically significant at the 0.05 alpha level and, therefore, have been omitted. As illustrated, age was inversely related to social support, perceived stress and health practices. Widows overall perceived more social support and reported more stress than did widowers, whereas men reported more alcohol consumption than did women. Higher education and income also were associated with greater alcohol consumption, but higher income was related to lower perceived stress. Although the literature suggested that education might impact social support and coping behaviors, education had negligible effects on these variables in this sample.

Contrary to expectation, there was no evidence for a direct effect of social support on the physical and mental well-being of the bereaved. The initial estimate of the beta coefficient for this parameter at T_1 was negligible (0.022). In examining the indirect effects of social support, parameter estimates were consistent only with the premise that social support enhances coping behaviors which, in turn, foster well-being (as evidenced in this study by diminished illness symptomatology). Although, the literature suggested that social support reduces stress, social support had a direct positive effect on the perceived stress of widows and widowers. The findings of several recent studies have noted the potential for negative social interactions to increase one's stress experience (23,24). Unfortunately, subjects in this study provided only an average overall rating of the supportiveness of network interactions; distinct information on unsupportive social interactions was not obtained.

The hypothesized path between social support and health practices as measured by alcohol consumption also was negligible. Furthermore, the

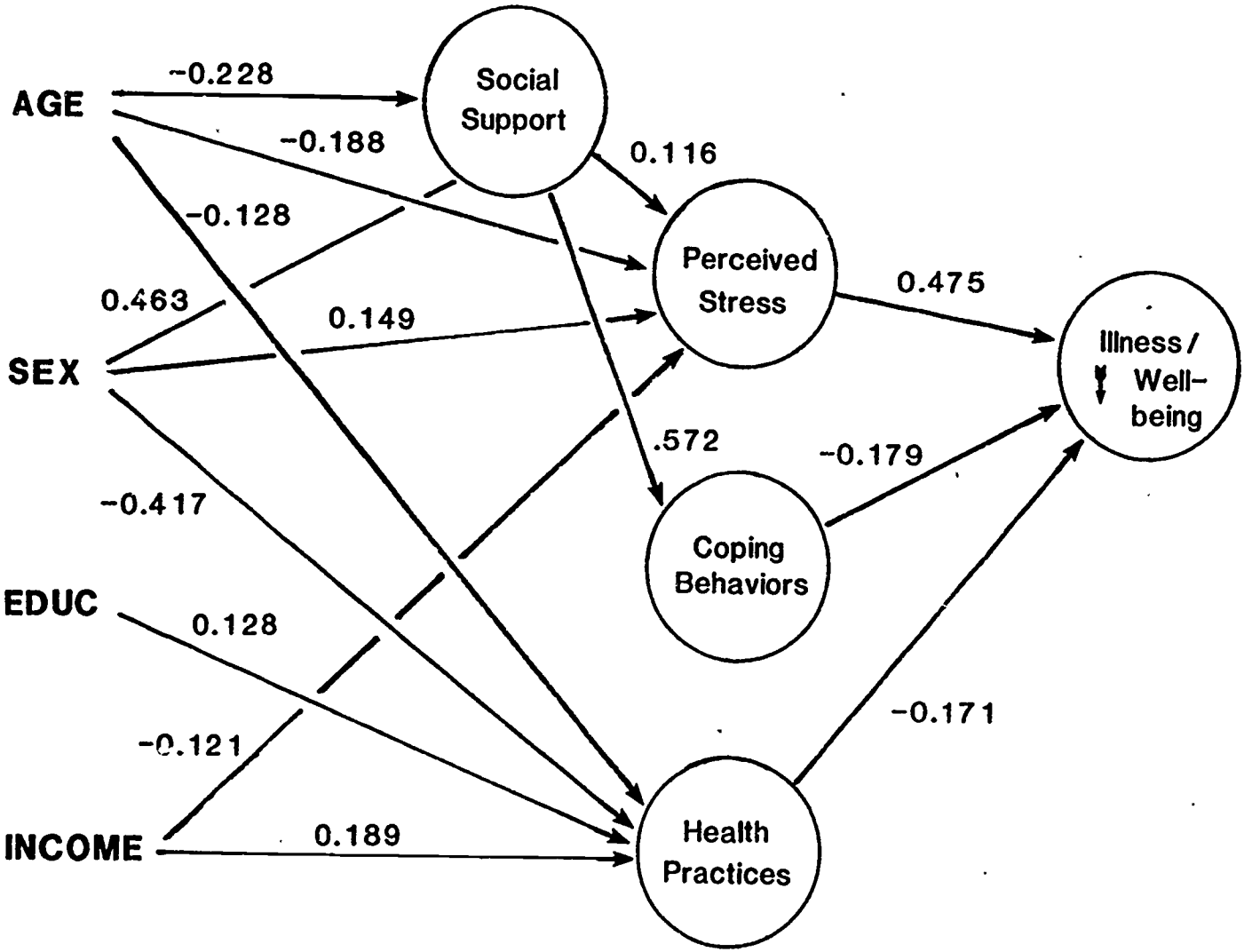

Figure 3. Model Estimated at T_1 (N = 490)

negative estimate obtained for the path between alcohol consumption and illness symptomatology was contrary to the hypothesized model. Among those individuals admitting to the regular use of alcohol, few reported more than 3-4 drinks per week. Neff and Husaini(25) noted that moderate levels of alcohol consumption have a stress-buffering function, whereas heavy drinking to cope with stressors has been related to higher levels of psychological distress(26). The findings of this study would appear to be consistent with the observation of Neff and Husaini that alcohol consumption in moderate amounts serves to reduce tension, thereby, reducing the risk for depressive reactions and other stress related symptomatology.

With few exceptions, the model as specified and estimated at T_1 was replicated at T_2 and T_3, but not at T_4 or T_5. At T_2 (Figure 4), the effects of income on perceived stress and education on health practices were negligible. Also, at T_2, a direct positive effect of perceived stress on health practices, namely alcohol consumption, emerged. While the positive effect of social support on coping behaviors became stronger at T_2 and T_3 (Figure 5), the effect of stress on illness was less pronounced over time although higher perceived stress continued to be associated with higher illness symptomatology.

Table 2 summarizes data on the goodness-of-fit of the model. As illustrated, the goodness-of-fit index was consistently high and the root mean square residual was very low. The total coefficient of determination for the structural equations, however, was lower at subsequent time intervals, indicating that the amount of variance in well-being accounted for by the model was lower at T_2 and T_3 than at T_1. For the sample as a whole, the model accounted for 75% of the variance in well-being at T_1, as compared to about 56% of the variance in well-being at T_2 and

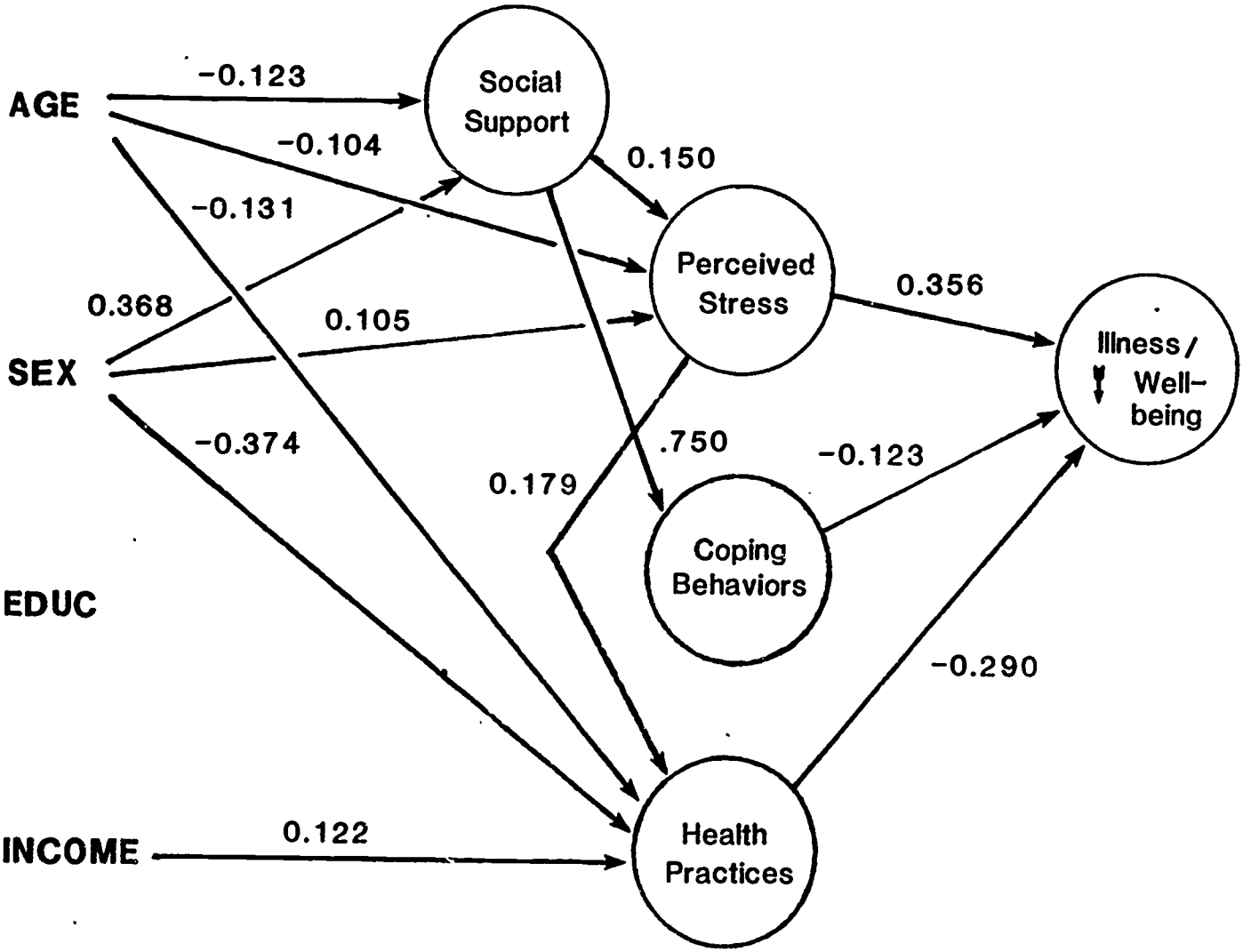

Figure 4. Model Estimated at T_2 (N = 472)

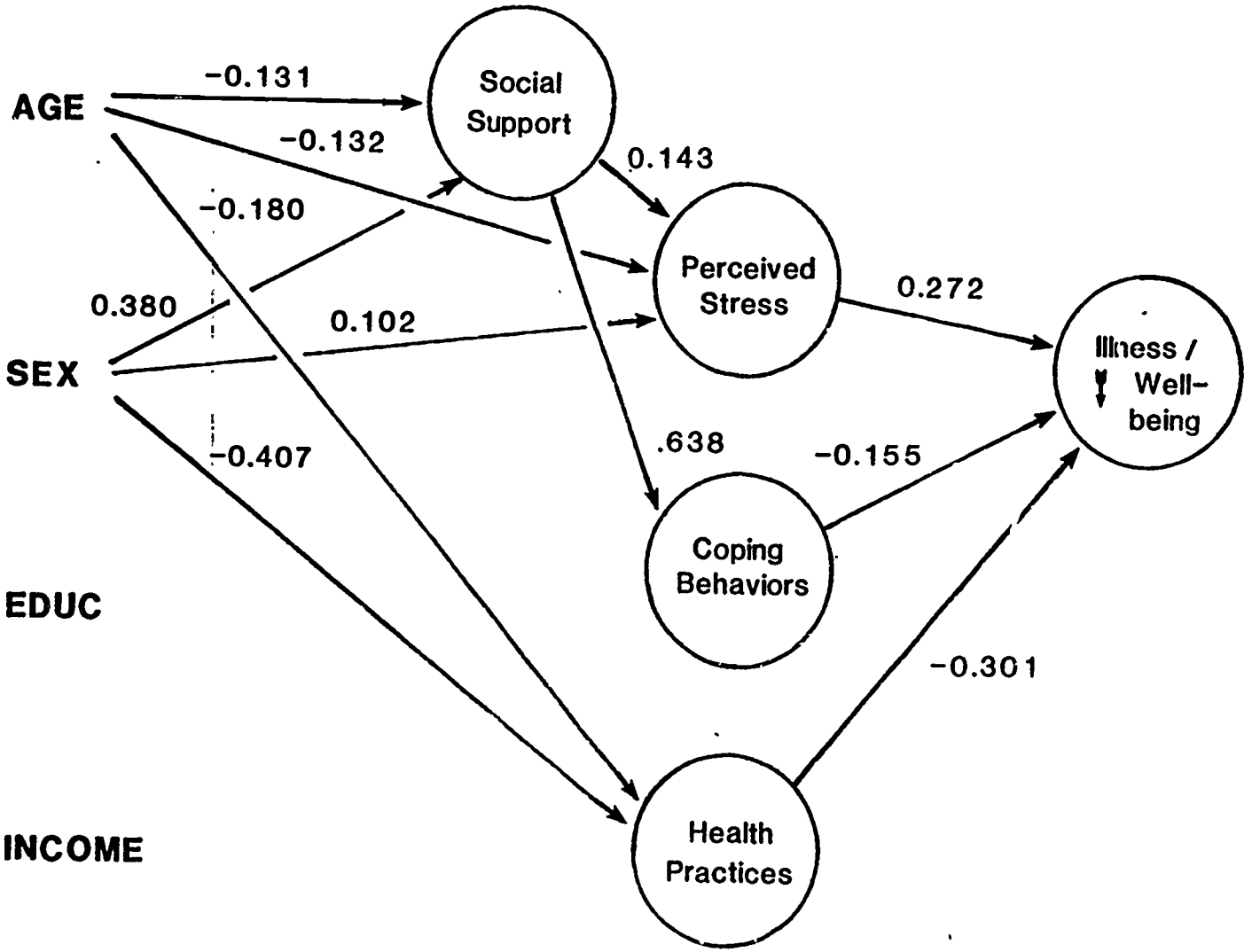

Figure 5. Model Estimated at T_3 (N = 444)

Table 2.

Coefficients of Determination, Goodness-of-Fit Indexes, and Root Mean Square Residuals for the Sample T1, T2, T3

Indicator of Fit	T1	T2	T3
Coeff. of Det. for Struct. Equations	0.914	0.789	0.831
Goodness-of-Fit Index	0.980	0.977	0.973
Adj. Goodness-of-Fit	0.968	0.962	0.956
Root Mean Square	0.046	0.049	0.054

60% at T_3.

The preceding analyses of the model utilized cross sectional data collected at similar time intervals. Several models incorporating lagged time effects among the constructs were subsequently evaluated using data from the three panel waves collected during the first year of bereavement (N = 413). While the direct effect of social support on illness symptomatology was negligible for cross sectional data, a time-lagged effect was confirmed such that those with more support at T_1 experienced less illness at T_2 (Figure 6) and T_3 (-0.185).

As noted previously, the model could not be estimated with an acceptable fit at T_4 and T_5. The modification indices provided by the program pointed to problems with the measurement model rather than the structural equations model. The constructed variables were subjected to another series of confirmatory factor analyses to determine the nature of the problem. The latter revealed that a number of items no longer loaded on the same factors as before. Apparently, the meaning imparted to selected items by subjects changed as they entered the second year of bereavement. While it was possible to recompute the observed variables for T_4 and T_5, retaining only those original items that still manifested loadings of .40 or above, several of the variables were reduced to two or three items. Subsequent efforts to estimate the model using the recomputed variables failed to yield an acceptable fit. Thus, it appears that the model is applicable only to those in the early grieving process, i.e., the first year of bereavement. It may be that different indicators are needed to tap well-being and adaptation to widowhood beyond the first year of bereavement. The possibility that another model, other than the one examined, characterizes later widowhood also needs to be explored.

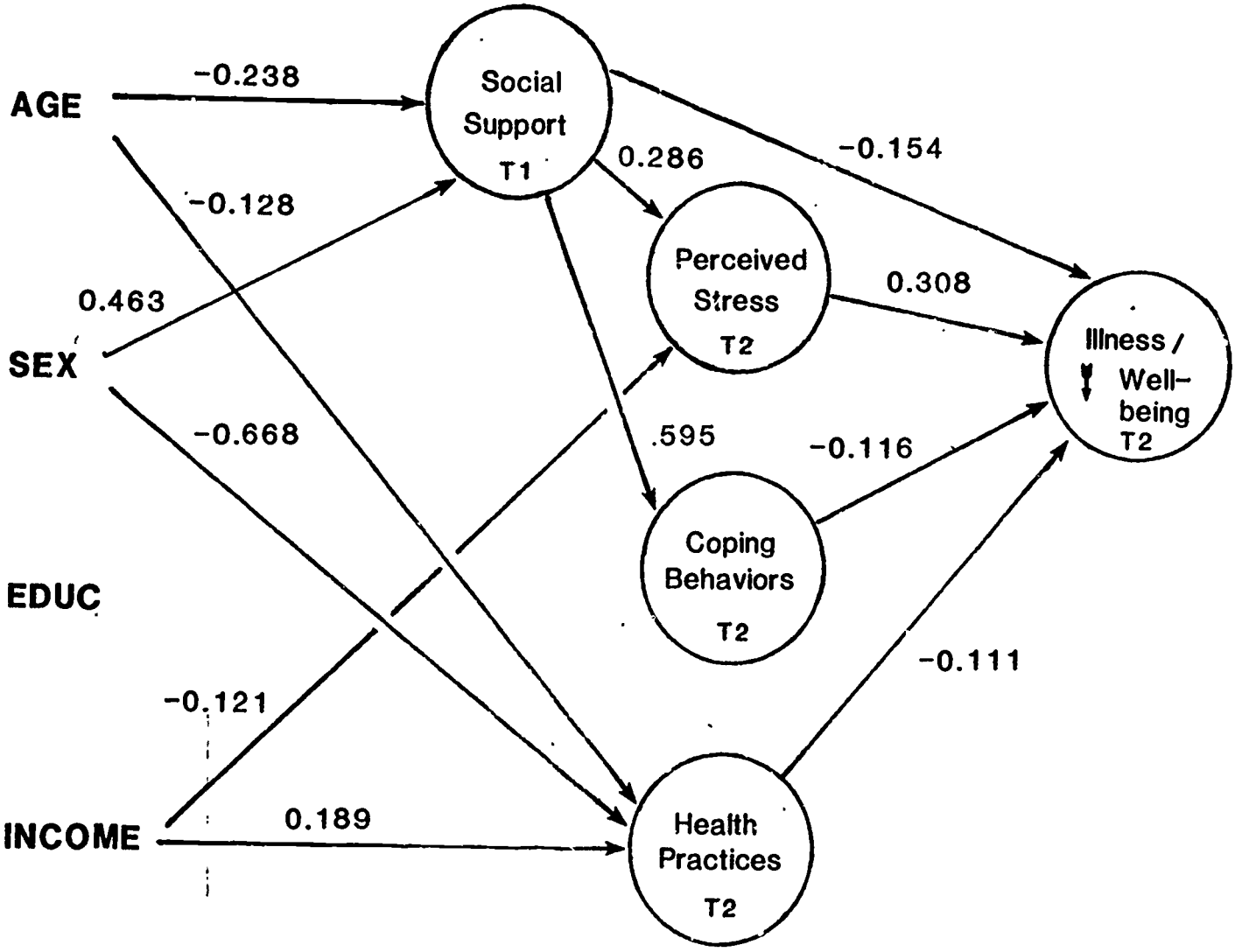

Figure 6. **Lag Effect of Social Support at T_1 on Stress, Coping Behavior, Health Practices and Well-being at T_2**

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